ASSESSMENT AND TREATMENT OF PROBLEM BEHAVIOR MAINTAINED BY ESCAPE FROM ATTENTION AND ACCESS TO TANGIBLE ITEMS

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The results obtained from two consecutive functional analyses conducted with a 6-year-old child with autism are described. In the initial functional analysis, the highest rates of problem behavior occurred in the play condition. In that condition, the delivery of attention appeared to occasion problem behaviors. A second functional analysis was conducted wherein an escape from attention condition and a tangible condition were added. In the second functional analysis, higher rates of responding were observed in the escape from attention and tangible conditions. The results suggested that problem behavior was maintained by negative reinforcement in the form of escape from attention and positive reinforcement in the form of gaining access to preferred tangible items. Problem behavior was treated using functional communication training combined with noncontingent reinforcement.

DESCRIPTORS: functional analysis, negative reinforcement, autism

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Although functional analysis is a powerful assessment tool for identifying behavior–environment relations, commonly used analogue conditions may need to be modified to identify idiosyncratic reinforcers or functional subcategories of behavior. For example, aberrant behavior maintained by negative reinforcement in the form of escape can be broken down into distinct subcategories. One subcategory is aberrant behavior that produces escape from or avoidance of activity or work demands. Another subcategory of negatively reinforced problem behavior produces escape from or avoidance of social interaction (Taylor & Carr, 1992). Making distinctions among these subcategories has obvious implications for treatment planning. Carr (1994) points out the importance of identifying these subcategories of behavior function and proposes that an analysis might begin by focusing on the identification of functional categories followed by an analysis that focuses on a given subcategory. In the current study, the inconclusive results of an initial functional analysis led to a second functional analysis to identify specific subcategories of behavior function.

METHOD

Participant, Setting, and Data Collection

Preston, a 6-year-old boy who had been diagnosed with autism and mild mental retardation, had been admitted to an inpatient facility for the assessment and treatment of a severe behavior disorder. Preston's targeted problem behaviors included aggression (hitting, kicking, scratching, head butting, throwing objects at others), disruption (screaming, throwing objects, swiping objects off tables, tearing objects), self-injurious behavior (SIB) (hitting head with hand, head banging on any surface), and spitting (release of saliva from the mouth with force). Preston was ambulatory and was able to communicate with a few words.

Frequencies of SIB, aggression, disrup-

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tion, and spitting were recorded on laptop computers. Interobserver agreement data were collected during 33%, 40%, and 37% of sessions for the two functional analyses and treatment analysis, respectively. Exact agreement coefficients were calculated by dividing the total number of agreements by the number of agreements plus disagreements and multiplying by 100%. An agreement was defined as two independent observers agreeing on the exact frequency of a response observed within a given 10-s interval. The mean exact agreement coefficients were 99%, 99%, and 98% for the two functional analyses and the treatment analysis, respectively. All sessions were 10 min in length.

Functional Analysis and Modified Functional Analysis

A functional analysis using the procedures described by Iwata, Dorsey, Slifer, Bauman, and Richman (1982/1994) was conducted. Social attention, demand, and play conditions were conducted using a multielement design. In the social attention condition, Preston had access to toys while a therapist engaged in work. The therapist provided brief attention contingent on the occurrence of problem behaviors. During the demand condition, a therapist presented demands to Preston using three-step guided compliance. Escape was provided contingent on the occurrence of problem behaviors. During the play condition, Preston had access to toys, and a therapist provided brief attention every 30 s following the first 5-s period in which problem behavior did not occur. There were no demands issued in this condition, and the therapist ignored all problem behaviors. The alone condition was not con-

ducted because Preston's parents reported that aggression was the primary problem behavior. A tangible condition was not conducted based on parents' report that they did not provide tangible items contingent upon problem behavior. Based on the results of the initial functional analysis and other observations, a modified functional analysis was developed and conducted.

During the second functional analysis, the demand and social attention conditions were identical to those in the first functional analysis. However, an escape from attention condition and a tangible condition were added. During the escape from attention condition, the therapist provided attention to Preston by talking to him and commenting on his play. The therapist did not attempt to remove any toys and avoided interfering with Preston's play. When Preston engaged in a problem behavior, the therapist terminated attention for 30 s. During the tangible condition, problem behavior produced 30 s of access to a preferred toy.

Treatment Analysis

Based on the results of the functional analyses, a treatment consisting of functional communication training (FCT) and noncontingent reinforcement (NCR) was evaluated using a multiple baseline design across the tangible and escape from attention conditions. The baseline conditions were identical to the escape from attention and tangible conditions in the second functional analysis. Prior to implementing FCT, Preston was prompted to emit verbal responses to terminate attention ("play by myself") and to obtain toys ("toys please"). Preston was capable of emitting these verbal responses; however, they had not been observed pri-

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Figure 1.   Results of initial and modified functional analyses are depicted in the first panel. Results of the treatment analyses across the escape from attention and tangible conditions are depicted in the second and third panels, respectively.
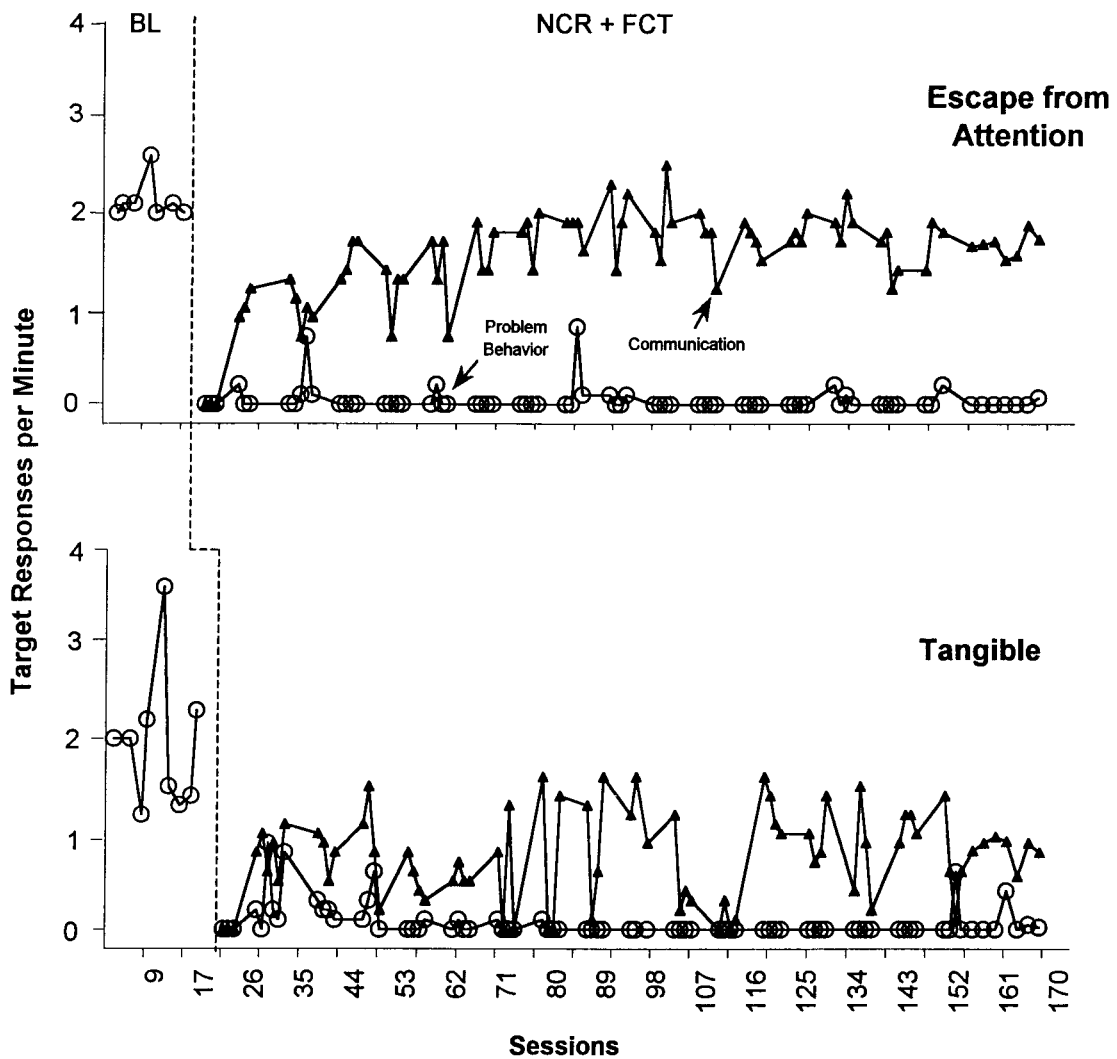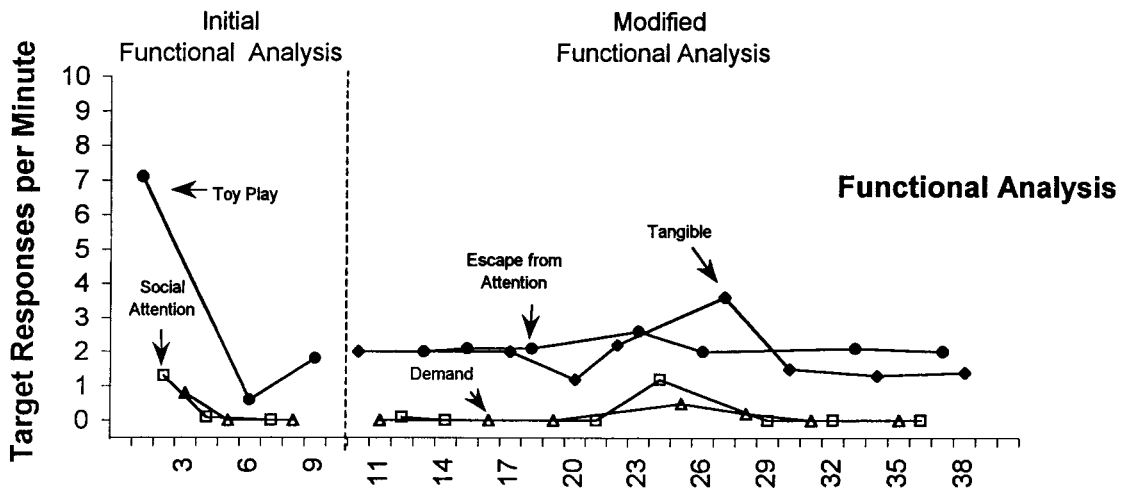
or to training. During FCT, these verbal responses resulted in termination of attention and access to toys for 30 s, respectively. In addition, problem behaviors were placed on extinction (i.e., problem behavior did not result in escape from attention or access to toys). Delay-to-reinforcement fading was conducted in the tangible condition to help Preston tolerate waiting for toys for up to 10 s after appropriately requesting them. An NCR component was included in both conditions to provide an enriched environment wherein Preston had access to other toys and books for 30 s on a fixed-time 3-min schedule.

RESULTS AND DISCUSSION

During the initial functional analysis, higher rates of responding, consisting primarily of aggression, were observed in the play condition ($M = 3.17$ responses per minute; Figure 1, top panel, first phase). However, the initial functional analysis was limited in that it was terminated at a time when responding was decreasing in the play condition. Despite the decreased rates of responding across play sessions, problem behavior occurred almost exclusively when the therapist provided attention. In addition, informal observations suggested that Preston engaged in problem behavior when preferred items were removed. The second functional analysis (Figure 1, top panel, second phase) found higher response rates in both the escape from attention and the tangible conditions ($M = 2.1$ and 1.9 responses per minute, respectively). Results of the treatment analysis (Figure 1, second and third panels)

revealed that the implementation of FCT with NCR decreased problem behavior in both the escape from attention condition ($M = 0.05$ responses per minute) and the tangible condition ($M = 0.07$ responses per minute). Overall, the treatment package of FCT plus NCR resulted in greater than 96% reduction in aberrant behavior relative to baseline in both conditions. In addition, communication increased in both conditions.

The inconclusive results of the initial functional analysis led us to hypothesize that Preston may have been engaging in problem behavior to terminate social attention. After conducting the second functional analysis, the functional subcategory (social negative reinforcement) of Preston's aberrant behavior was identified. Contrary to parental report, direct observation prompted us to include a tangible condition in the second functional analysis. This function would have been overlooked based on the results of the initial functional analysis.

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